

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-9 (Canceled).

10. (Currently amended) ~~A~~ ~~in~~ a high-pressure fuel pump (10) for a fuel injection system (56), having a housing (17, 47), a piston (13) guided in a cylindrical bore (15) of the housing (17), a base plate (27) in contact with a polygonal ring (23) on a drive shaft of the pump (10), said piston (13) having a first end guided at a first end of said cylindrical bore (15), said piston (13) having a free second end guided within a second end of said cylindrical bore (15), having a low-pressure inlet (45) disposed at the second end of the cylindrical bore (15), having a supply chamber (31) in which the fuel is compressed by the free end of the piston (13), having an intake valve (35) disposed between the supply chamber (31) and the low-pressure inlet (45), a valve member of the intake valve (35) being braced against an end of the a piston (13) via a compression spring (43) disposed in the supply chamber (31), and ~~having~~ a high-pressure outlet, ~~the improvement~~ wherein the valve member of the intake valve (35) is embodied as a ball (39).

11. (Previously presented) The high-pressure fuel pump of claim 10, further comprising a spring plate (41) between the compression spring (43) and the ball (39).
12. (Previously presented) The high-pressure fuel pump of claim 10, wherein the diameter of the ball (39) is less than the diameter of the compression spring (43).
13. (Previously presented) The high-pressure fuel pump of claim 11, wherein the diameter of the ball (39) is less than the diameter of the compression spring (43).
14. (Previously presented) The high-pressure fuel pump (10) of claim 10, further comprising a sealing seat (37) in the housing (17, 47) and cooperating with the ball (39).
15. (Previously presented) The high-pressure fuel pump (10) of claim 11, further comprising a sealing seat (37) in the housing (17, 47) and cooperating with the ball (39).
16. (Previously presented) The high-pressure fuel pump of claim 14, wherein the sealing seat (37) has a seat angle (α) of between 30° and 150°.
17. (Previously presented) The high-pressure fuel pump of claim 15, wherein the sealing seat (37) has a seat angle (α) of between 30° and 150°.

18. (Previously presented) The high-pressure fuel pump of claim 16, wherein the seat angle (α) is about 90°.

19. (Previously presented) The high-pressure fuel pump of claim 17, wherein the seat angle (α) is about 90°.

20. (Currently amended) The high-pressure fuel pump of claim 14, wherein the housing (17, 47) includes a screw (47), which closes off the second end of said a cylinder bore (15) from outside; and wherein the sealing seat (37) is embodied in a face end (52), toward the supply chamber (31), of the screw (47).

21. (Currently amended) The high-pressure fuel pump of claim 15, wherein the housing (17, 47) includes a screw (47), which closes off the second end of said a cylinder bore (15) from outside; and wherein the sealing seat (37) is embodied in a face end (52), toward the supply chamber (31), of the screw (47).

22. (Currently amended) The high-pressure fuel pump of claim 16, wherein the housing (17, 47) includes a screw (47), which closes off the second end of said a cylinder bore (15) from outside; and wherein the sealing seat (37) is embodied in a face end (52), toward the supply chamber (31), of the screw (47).

23. (Currently amended) The high-pressure fuel pump of claim 17, wherein the housing (17, 47) includes a screw (47), which closes off the second end of said a cylinder bore (15) from outside; and wherein the sealing seat (37) is embodied in a face end (52), toward the supply chamber (31), of the screw (47).

24. (Previously presented) The high-pressure fuel pump (10) of claim 20, wherein the screw (47) has a region (50) of reduced diameter; wherein the reduced-diameter region (50) together with the housing (17) defines an annular chamber (51); and wherein the annular chamber (51) communicates hydraulically with the low-pressure inlet (45).

25. (Previously presented) The high-pressure fuel pump (10) of claim 22, wherein the screw (47) has a region (50) of reduced diameter; wherein the reduced-diameter region (50) together with the housing (17) defines an annular chamber (51); and wherein the annular chamber (51) communicates hydraulically with the low-pressure inlet (45).

26. (Currently amended) A fuel injection system (56), comprising
a fuel tank (58),
at least one injection valve (64) which injects the fuel directly into the combustion chamber (66) of an internal combustion engine (54),
at least one high-pressure fuel pump (10), and
a fuel collection line (62) to which the at least one injection valve (64) is connected,

the high-pressure fuel pump (10) ~~being embodied in accordance with claim 10~~ having a housing (17, 47), a piston (13) guided in a cylindrical bore (15) of the housing (17), a base plate (27) in contact with a polygonal ring (23) on a drive shaft of the pump (10), said piston (13) having a first end (13) guided at a first end of said cylindrical bore (15), said piston (13) having a free second end guided within a second end of said cylindrical bore (15), a low-pressure inlet (45) disposed at the second end of the cylindrical bore (15), a supply chamber (31) in which the fuel is compressed by the free end of the piston (13), an intake valve (35) disposed between the supply chamber (31) and the low-pressure inlet (45), a valve member of the intake valve (35) being braced against an end of the piston (13) via a compression spring (43) disposed in the supply chamber (31), and a high-pressure outlet, wherein the valve member of the intake valve (35) is embodied as a ball (39).

27. (Currently amended) An internal combustion engine (54), having at least one combustion chamber (66) into which the fuel is injected directly, by a fuel injection system (56) ~~in accordance with claim 26,~~ comprising

a fuel tank (58),
at least one injection valve (64) which injects the fuel directly into the combustion chamber (66) of an internal combustion engine (54),
at least one high-pressure fuel pump (10), and

a fuel collection line (62) to which the at least one injection valve (64) is connected,

the high-pressure fuel pump (10) having a housing (17, 47), a piston (13) guided in a cylindrical bore (15) of the housing (17), a base plate (27) in contact with a polygonal ring (23) on a drive shaft of the pump (10), said piston (13) having a first end guided at a first end of said cylindrical bore (15), said piston (13) having a free second end guided within a second end of said cylindrical bore (15), a low-pressure inlet (45) disposed at the second end of the cylindrical bore (15), a supply chamber (31) in which the fuel is compressed by the free end of the piston (13), an intake valve (35) disposed between the supply chamber (31) and the low-pressure inlet (45), a valve member of the intake valve (35) being braced against an end of the piston (13) via a compression spring (43) disposed in the supply chamber (31), and a high-pressure outlet, wherein the valve member of the intake valve (35) is embodied as a ball (39).